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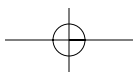
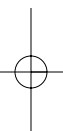
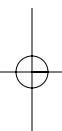
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Recommendations:

Print on recycled white paper with enough opacity to prevent bleed through.

If printing on coated paper, use a varnish or aqueous coating.





LAND-BASED SOURCES OF MARINE DEBRIS

What Is Marine Debris?



The National Oceanic and Atmospheric Administration defines marine debris as any man-made object discarded, disposed of or abandoned that enters the coastal or marine environment. It may enter directly from a ship, or indirectly when washed out to sea via rivers, streams and storm drains. The increased popularity of synthetic items over the past 40 years has lessened the world's dependence upon natural materials. When these durable and highly buoyant synthet-

ic products enter the ocean environment they can travel for thousands of miles on ocean currents, posing a threat to ocean ecosystems and wildlife above and below the water line. Consequently, marine debris has become one of the most pervasive pollution problems facing the world's oceans and waterways. Some of the most common marine debris items include cigarette filters, food wrappers, beverage bottles and cans, grocery and trash bags, fishing line, nets and gear.

***MARINE DEBRIS HAS BECOME ONE OF THE MOST
PERVASIVE POLLUTION PROBLEMS FACING THE
WORLD'S OCEANS AND WATERWAYS.***

Where Does It Come From?

All types of debris can be traced to one source – people. But determining exactly how debris reaches the ocean can be difficult since trash can travel long distances before settling on shorelines or the ocean floor. Most researchers traditionally classify marine debris as coming from **land-** or **ocean/waterway-based** sources.

Land-based sources

People's mishandling of waste materials and a host of other items while on land constitutes the bulk of the marine debris problem. Debris is also blown into the water

or carried by creeks, rivers, storm drains and sewers into the ocean.

Sources of land-based debris include:

- Inappropriate disposal of trash from many land-based activities, including picnicking, beachgoing, fishing and waterside sporting events;
- Debris items from lawns, parking lots, sidewalks and streets being blown, swept or washed into storm drains, which then empty untreated into the ocean;
- Improper disposal of packaging materials;
- Inadvertent or intentional release of waste from shore-based solid waste disposal and waste processing facilities; and
- Sewage overflows.

Ocean/waterway-based sources

People also generate debris while at sea. Like land-based debris, the majority of ocean/waterway-based debris reaches the ocean through people's failure to properly dispose of or stow their trash while onboard their boats and vessels.





LAND-BASED SOURCES OF MARINE DEBRIS

Impacts of Marine Debris



In addition to being unsightly, marine debris poses significant threats to ocean ecosystems, wildlife and human health and safety.

Effects on ocean ecosystems

- Debris can pollute and clog watersheds – land areas that drain water to a particular stream, river, lake, bay or ocean – adversely affecting water quality and habitat.
- Abandoned nets, plastic tarps, fishing gear and other debris can smother and crush sensitive coral reef and seagrass bed ecosystems and their benthic (bottom-dwelling) species.

Effects on marine wildlife

- Fishing line, nets, rope and grocery and trash bags can entangle,

maim and even drown many wildlife species, including sea turtles, marine mammals, sea birds, fish and other species.

- Cigarette filters, food bags, pieces of plastic and packaging look like food to many animals. Once ingested, these materials can cause starvation and/or choking.

Effects on people

- Medical and personal hygiene debris can enter waterways when sewer systems fail or overflow. These items often contain harmful bacteria and pathogens.
- Syringes, broken glass and other hazardous items pose obvious dangers to bare-footed beachgoers.

Working Toward Solutions

Unfortunately, removing existing debris is only a temporary solution to the larger debris problem. Marine debris pollution can only truly be managed through prevention – changing the behaviors that cause marine debris to enter the environment.

Consequently, multiple organizations and local, regional and state agencies are collaborating on outreach projects designed to bring awareness to and alleviate the problem of marine debris. Several efforts are focusing on monitoring the behaviors and activities that

result in marine debris and developing prevention strategies that educate people on marine debris issues, their role in the problem and how to prevent it. For more information on programs that are working to foster change, visit www.marinedebris.noaa.gov.

What You Can Do

Here are some steps that you can take to help keep oceans and waterways free of debris:



- Reduce, reuse, recycle. Choose reusable items and use fewer disposable ones (e.g., use fewer disposable bags when shopping, or bring your own reusable bags).
- Retain all pieces of fishing line, net or other litter for proper disposal in trash containers.
- Keep streets, sidewalks, parking lots and storm drains free of trash – they empty into our oceans.



- Stow all trash on your boat for proper disposal on land. At the beach, park or playground, dispose of all trash in the proper receptacles or take your trash home with you. Pick up any debris you see while out.
- Serve as an example to others. Get involved in cleanups in your area and encourage others to help keep the beaches and oceans clean.